# Knowledge in perspective Selected essays in epistemology

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## Introduction: back to basics

Foundationalism postulates foundations for knowledge. Here agree its two branches – the rationalist and the empiricist – even if they disagree in their respective foundations, and disagree on how to erect a superstructure.

For the rationalist, only rational intuition can give a secure foundation, and only deduction can build further knowledge on that foundation. Here the model of knowledge is the axiomatic system, with its self-evident axioms and its theorems derived through logical deduction. Rationalists, therefore, were the logicists, who tried to reduce all mathematics to self-evident axioms.

More ambitious yet, Descartes sketched in his *Meditations* a strategy for rationally founding all knowledge, not only mathematical knowledge. But his strategy required substantive commitments that turned out to be less than axiomatic – commitments of natural theology, for example.

The failure of rationalism is evident both in Descartes and in logicism. For their part, empiricists accept not only foundations by rational intuition but also foundations by sensory experience. Equally unsuccessful, however, was their project of reducing all physical reality to sensory experience – whose apotheosis is Carnap's phenomenalism. Besides, as Hume showed, the future cannot be predicted deductively: The reasoning required outstrips logical deduction.

Empiricism thus becomes more liberal than rationalism in two respects: First, it accepts a broader foundation, provided not only by rational intuition but also by sensory experience; second, it admits not only deductive reasoning but also inductive reasoning.

Not even this liberalization suffices, however; we enjoy much knowledge not empirically buttressed by sensory experience, present or even recalled – almost everything one knows of history or geography or science, for example, as well as the names of friends and relatives, and a great diversity of knowledge about artifacts, about dishes and how they taste, about how people react, and so forth. None of that can be defended solely by induction on the basis of sensory experience present or recalled.

Consider also observational knowledge of immediate surroundings perceived without instruments. Not even this observational knowledge

can easily be explained merely by induction or deduction from what one knows by introspection of one's own sensory experience. Enumerative induction is not enough. That is clear. Nor is it clearly sufficient to use abductive inference – inference to the best explanation.

Accordingly, many have adopted an even more liberal empiricism, with a broader foundation that includes not only what we intuit rationally and what we know by introspection of our own sensory experience but also what we know by direct observation of our surroundings.

Let us pause, however, to consider in greater detail this broader foundation, in its three parts: the intuitive, the introspective, and the observational. What is a rational intuition? Is it a true belief, without inference, in something logically necessary? Not necessarily, for such a belief can arise and be sustained by guessing or by superstition or brainwashing – and, in any of these cases, even if one believes something logically necessary, this does not imply that one knows what one believes. The question remains: What is a rational intuition?

With respect to the other two parts of the empiricist foundations there are similar questions: What is introspection? What is observation? Suppose a well-lit, white, triangular surface against a black background. From a favorable angle and distance, the observer sees the white triangle and knows two things. He knows, first, that his visual experience has a certain character: that of being visual experience as if he had a white triangle before his eyes. And he knows also that in fact he does have before him at a certain distance a white triangular surface. These are indeed paradigms of knowledge by introspection of one's own experience, and by observation of one's immediate surroundings.

Once again, suppose an observation of a white surface, well lit and ideally situated, against a black background. But suppose this time it is not a triangle but a dodecagon (with twelve equal sides). The observer sees the white dodecagon and has two thoughts. He thinks, first, that his visual experience has a certain character, that of being visual experience as if he saw a white dodecagon. And he thinks, further, that in fact he sees a white dodecagon a certain distance away. Although he is twice right, however, he is right only by chance, for he lacks the capacity to distinguish dodecagons with a high probability of success – indeed, he often confuses dodecagons with decagons. Therefore, not every observational belief constitutes foundational knowledge.

Summing up: Foundational empiricism postulates three ways for a belief to constitute foundational knowledge – rational intuition, introspection of one's own experience, and direct observation of one's environment. For rational intuition there is the problem that one can be right in accepting some necessary truth although one is only guessing – which

means, of course, that one does not know. The problem here for the foundationalist is this: We need an explanation of what distinguishes beliefs that constitute rational intuition from those that do not, when both are beliefs in propositions true with apodictic necessity. Simplicity alone will not yield our distinction, moreover, because people differ widely in the relevant capacities, and some mathematicians are capable of rather complex intuitions (as was, e.g., the amazing Ramanujan).

Besides, neither introspection nor observation is always a trustworthy source of fundamental knowledge. As we saw with our dodecagon, a belief can be introspective or observational without constituting knowledge or a foundation for further knowledge. Once more the foundationalist needs to explain the difference between, on one hand, introspective or observational beliefs that constitute knowledge and, on the other, beliefs that are not knowledge, despite being introspective or observational.

Just how widely people differ in the relevant capacities – intuition, introspection, or observation – may be seen in a case described by the neurologist Oliver Sacks, a case of identical twins, John and Michael, idiots savants with a measured IQ of 60. Sacks described his first encounter with the twins as follows:

A box of matches on their table fell, and discharged its contents on the floor: "111" they both cried simultaneously; and then, in a murmur, John said "37." Michael repeated this, John said it a third time and stopped. I counted the matches – it took me some time – and there were 111.

"How could you count the matches so quickly?" I asked. "We didn't count," they said. "We saw the 111."...

"And why did you murmur '37,' and repeat it three times?" I asked the twins. They said in unison "37, 37, 37, 111."...

"How did you work that out?" I said, rather hotly. They indicated, as best they could, in poor, insufficient terms – but perhaps there are no words to correspond to such things – that they did not "work it out," but just "saw" it, in a flash. John made a gesture with two outstretched fingers and his thumb, which seemed to suggest that they had spontaneously trisected the number, or that it "came apart" of its own accord, by a sort of spontaneous, numerical "fission." They seemed surprised at my surprise – as if I were somehow blind; and John's gesture conveyed an extraordinary sense of immediate, felt reality.

On another occasion, Sacks found the twins firing six-digit numbers at each other. He wrote the numbers down and later found them to be all prime numbers, whereupon he obtained a list of prime numbers and the next day joined the twins in their game:

Oliver Sacks, The Man Who Mistook His Wife for a Hat and Other Clinical Tales (New York: Harper & Row, 1987), ch. 23, pp. 199-200.

I decided to join in, and ventured a number, an eight figure prime. They both turned towards me, and then suddenly became still, with a look of intense concentration, and perhaps wonder on their faces. There was a long pause – the longest I had ever known them to make, it must have lasted a half-minute or more – and then suddenly, simultaneously, they both broke into smiles. . . . Then John, who always took the lead, thought for a very long time – it must have been five minutes, though I dared not move, and scarcely breathed – and brought out a nine figure number; and after a similar time his twin Michael responded with a similar one.<sup>2</sup>

The game continued, and in less than an hour the twins were up to twenty-digit numbers, which Sacks was unable to check because his book stopped at ten-digit primes.

Again, we need an explanation of what distinguishes beliefs that constitute foundations, an explanation that will do justice to the diversity of human capacities brought out, for instance, by Sacks's twins. Despite interesting progress towards this desideratum, especially in recent decades, to this day it remains elusive.

In spite of its failures, says W. V. Quine,

epistemology still goes on, though in a new setting and a clarified status. Epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science. It studies a natural phenomenon, viz., a physical human subject. This human subject is accorded a certain experimentally controlled input – certain patterns of irradiation in assorted frequencies, for instance – and in the fullness of time the subject delivers as output a description of the three-dimensional external world and its history. The relation between the meager input and the torrential output is a relation that we are prompted to study for somewhat the same reasons that always prompted epistemology; namely, in order to see how evidence relates to theory, and in what ways one's theory of nature transcends any available evidence.<sup>3</sup>

Here are two central planks of Quine's epistemology:

- (P1) Epistemology is now a branch of psychology that studies the causal relations between sensory input and theoretical output.
- (P2) Engaging in such a study now leads to the conclusion that the sensory input that causes man's theoretical output does not determine it, and that man's theoretical output is hence nearly all arbitrary free creation.

The first thesis, P1, is already in the passage cited earlier. As for P2, we

- 2 Ibid., p. 203. My thanks to Steven Hales for showing me the relevance of Sacks's writings.
- 3 "Epistemology Naturalized," in Ontological Relativity and Other Essays (New York: Columbia University Press, 1969), pp. 82-3.

are told in *The Roots of Reference* that science is in large measure a "free creation." Theoretical science is hence free-floating, but it is not alone. Even logic is in the same boat: "The steps by which the child was seen to progress from observational language to relative clauses and categoricals and quantification had the arbitrary character of historical accident and cultural heritage; there was no hint of inevitability."<sup>4</sup>

But in what sense is theory "arbitrary" relative to the available evidence? Completely arbitrary it cannot be, surely, lest it be as arbitrary as any superstition or mere conjecture. Quine seems to agree when he writes: "The channels by which, having learned observation sentences, we acquire theoretical language, are the very channels by which observation lends evidence to scientific theory. ... We see, then, a strategy for investigating the relation of evidential support, between evidence and scientific theory. We can adopt a genetic approach, studying how theoretical language is learned. For the evidential connection is virtually enacted, it would seem, in the learning."

If our theory of the world results from our free and arbitrary play of thought, and if nevertheless it is so related causally to observation as to be by definition "evident," that only prompts the question of how such "evidence" could possibly relate to knowledge. For Quine, "[the] answer is naturalism: the recognition that it is within science itself, and not in some prior philosophy, that reality is properly to be identified and described."

But this is no answer unless science provides not only the measure but also the very content of reality. By definition, epistemology recapitulates the genesis of scientific theory, which in turn determines all of ontology and metaphysics, since, by definition, what exists is what science postulates. Science hence arranges a forced wedding of epistemology with metaphysics. Correct epistemology, linked by definition with science, cannot possibly fool us on the content and nature of reality, since, by definition, it is science's say-so that determines what is so. Thus we obtain a guarantee that scientific theory enjoys epistemic justification and fits reality correctly – for such justification and reality are both defined by reference to such theory.

Doubt begins with the question of how we are to distinguish any science worthy of the title. If both reality and epistemology are defined by reference to science, it would be viciously circular now to define science by reference to reality or epistemology. How, then, are we to

<sup>4 &</sup>quot;The Nature of Natural Knowledge," in Samuel Guttenplan, ed., Mind and Language (Oxford: Clarendon Press, 1975), p. 80.

<sup>5</sup> Ibid., p. 76.

<sup>6 &</sup>quot;Reply to Stroud," in Midwest Studies in Philosophy 6 (1981): 474.

distinguish science from pseudoscience? How are we to draw and understand this distinction?

Quine's positivist answer offers first the following criteria for a scientific "system of the world": (a) it must predict a certain number of observations, (b) it must be finitely axiomatized, and (c) it must contain nothing unnecessary for the prediction of observations or the derivation of observation conditionals - of the form "if such-and-such were observed, then so-and-so would be observed." Such a system of the world is a "tight fit" over the relevant observations or observation conditionals. (I have simplified somewhat, but, I believe, without serious distortion.)

Observation is hence crucial for Quine. Beyond observation is a symbolic network valued according to whether it fits observation tightly, according to its success in entailing correct observation conditionals.

Problems remain. For example, if truth and reality are determined by science, and the content of science is determined by appeal to correct observation conditionals, how is the correctness of such conditionals determined? What is the basis of such correctness? Is there some observational reality that is fundamental and not derivative from any science?<sup>7</sup>

And there is, in addition, a notorious problem always faced by positivism. Quine says approximately the following:

(Q) Two things are determined by the genesis and content of science: first, what counts as "evidence"; second, the nature and content of reality; and correct science is itself determined by its "tight fit" over observation.

Nevertheless, we have seen that the third criterion for such a tight fit requires that any system that fits this tightly must contain nothing unnecessary for the derivation of correct observation conditionals. Consider now the very doctrine Q itself. Since Q is not needed for the derivation of any observation conditional, we must conclude that Q is not itself true. Apparently, if we combine Q with the account of a "tight fit," we obtain a self-refuting whole. This sort of self-refutation has always posed a serious problem for positivism, and Quine's positivism is no exception - as has been noted by Hilary Putnam.8

Putnam rejects positivism in favor of a doctrine that makes respectable room for itself, for philosophy in general, and even for values and norms. He proposes, therefore, an explication of truth and reality not in terms of science and observation but in terms of reason, of what would be rationally acceptable in ideal epistemic conditions. Now, the content of

 <sup>7</sup> Quine's naturalization is discussed further in Chapter 6.
8 "Why Reason Can't Be Naturalized," in Realism and Reason, Vol. 3 of his Philosophical Papers (Cambridge: Cambridge University Press, 1983).

what could thus turn out acceptable is not limited to the observable, nor even to what science may offer us, but includes also moral and other evaluations, as well as political views, philosophy, and the humanities generally. Putnam's doctrine is thus more sensibly inclusive than failed positivism – and has, of course, its attractions. Nevertheless, it is not entirely free of problems and must face, for example, the following:

Consider this proposition, which seems in fact true, but which in any case might be true (where the brackets function as a nominalizing device):

(P1) [No one is in ideal epistemic conditions.]

Proposition P1 is equivalent to

(P2) [P1 is true.]

which in turn amounts to

(P3) [Anyone who were to consider P1 in ideal epistemic conditions would accept it.]

But P3 is absurd; yet it is said to amount to P1, which is surely not absurd. Putnam's doctrine suffers therefore from a sort of self-refutation.9

Having taken a wrong turn, let us return to our start. The doctrine of foundations was said to suffer essentially the same problem in each of its three parts. The given, what is present to consciousness, can be grasped either by intuitive reason (when it is a rational axiom) or by introspection (e.g., when it is a matter of one's present sensory experience). But in neither case can we see with clarity the general limits of the epistemic mechanism involved. What do we intuit rationally? Everything necessary and simple, as are, for example, the simplest logical truths? That seems promising until we recall that what is simple and obvious for Ramanujan may not be so for others.

As for introspection, does one know foundationally everything one believes through introspection of one's own experience? Perhaps one is able to know foundationally that one has sensory experience of a white triangle against a black background. What if the figure is not a triangle, but a dodecagon, however, and one lacks the capacity to distinguish dodecagons by sight? If so, then even if (a) one in fact has a visual experience as if before one there were a dodecagon against a black background and (b) one believes that one is having such an experience – that is, an experience as if one had before one a dodecagon against a black background – still it does not follow that (c) one knows foundationally

<sup>9</sup> This argument is developed in detail by Alvin Plantinga in his "How to Be an Anti-Realist," Proceedings and Addresses of the American Philosophical Association 56 (1982): 47-70, where he kindly acknowledges its provenance.

what one thus believes, with no need of supporting reasons or inferences.

And the like is true of observation, as we saw earlier. Mere observation of a dodecagonic surface against a black background, giving rise to a belief that one sees such a surface, is not sufficient to make that belief a case of knowledge.

Note the realist posture of all such foundationalism. Criteria for knowledge are proposed on the basis of necessary truths, sensory experiences, or objective surfaces – all of which enjoy their own character independently of what anyone may believe. When such foundationalism fails, many turn away from the presupposed realism toward a conception of language or worldview or conceptual scheme as something that constitutes reality. This we saw in Quine, for whom science determines reality. And we saw it also in Putnam, for whom reality is again constituted by language and thought, the ideal if not necessarily the actual. But we also saw the problems of incoherence faced by these doctrines.

Yet others do not adopt antirealism but do turn coherentist. Davidson, for example, argues that an allegedly foundationalist idea, that of "confrontation between what we believe and reality," is "absurd," thus opening the way for coherentism, subsequently offered as a better alternative: "What distinguishes a coherence theory is simply the claim that nothing can count as a reason for holding a belief except another belief. Its partisan rejects as unintelligible the request for a ground or source of justification of another ilk." In explanation and support we are referred to Rorty, who claims that "nothing counts as justification unless by reference to what we already accept, and there is no way to get outside our beliefs and our language so as to find some test other than coherence." 11

### Suppose

- (a) that for a belief to be justified is for the subject to justify it or to have justified it;
- (b) that for one to justify a belief (really, successfully) is for one correctly and seriously to use considerations, reasons in its favor; and
- (c) that seriously and correctly to use considerations or reasons in favor of a belief is to use (i) other things one believes with justification and (ii) their (justifiedly believed) appropriate connection with the belief targeted for justification.

<sup>10</sup> Donald Davidson, "A Coherence Theory of Truth and Knowledge," in Dieter Henrich, ed., Kant oder Hegel? (Stuttgart: Klett-Cotta, 1983), pp. 423–38, 426.

<sup>11</sup> Richard Rorty, Philosophy and the Mirror of Nature (Princeton, N.J.: Princeton University Press, 1979), p. 178.

These are apparently involved in Davidson's and Rorty's view of epistemic justification as inevitably argumentative. So much seems defensible. What seems disastrous is the view of knowledge as a matter of just true belief that is thus (argumentatively) justified (even leaving aside the Gettier problem). If one is going to think of justification as thus essentially argumentative, then one must leave room for some other way in which a belief can amount to knowledge besides its being thus justified. But Davidson and Rorty oppose the very idea of a belief's amounting to knowledge through some causal process, through some sheer "confrontation" with reality.<sup>12</sup>

Fortunately, there is another way to overcome the problems of foundationalism. This alternative approach starts by recognizing those problems as follows: (a) Something is missing in a believer who accepts a necessary truth that is too complex for that believer to know it just on the basis of believing it; (b) something is also missing in the introspective belief that one has visual experience of a dodecagon when this figure is too complex for one to discriminate it and identify it just by introspection; and (c) finally, something is similarly missing in the observational belief that one has a dodecagonic surface before one when such surfaces are too complex for one to discriminate and identify them just by sight. What is missing in each of these cases is not just a matter of greater simplicity in the object of belief, however, because another subject might perfectly well have direct knowledge of similarly complex truths, by rational intuition, by introspection, or by observation. It is not just the intrinsic complexity of the truth involved that matters, therefore, but at most its excessive complexity for that subject. What the subject needs is a certain capacity, a certain faculty or intellectual virtue: that of distinguishing necessary truths up to a certain degree of complexity, or perhaps that of distinguishing dodecagons and other such figures by simple inspection.

According to this alternative approach, direct, foundational knowledge must be right not just by accident but by means of a noninferential faculty that enables the formation of beliefs on the matter in question with a high success ratio.

Other problems also yield to this approach. Recall our knowledge

12 This will be discussed later in some detail: with respect to Rorty, in Chapter 6, "Nature Unmirrored, Epistemology Naturalized," and with regard to Davidson, in Chapter 7, "Theories of Justification: Old Doctrines Newly Defended." If we view justification thus as essentially argumentative, then we probably need also a further idea of the aptness of a belief, an idea that is most likely to involve a causal relationship between that belief and reality, mediated though it might be by the intellectual virtue or faculty that gives rise to the belief. This conditional is defended most explicitly in Chapter 14, "Methodology and Apt Belief."

through memory of names, of places, of how things work, of history and geography, and so forth. When one recalls the name of one's own child, for example, one's belief derives neither from rational intuition nor from inference based on present or recalled observation or sensory experience. Accordingly, such belief is not based on the traditional foundations of reason, introspection, or observation, present or recalled. Despite its lack of such traditional foundations, such a belief surely does amount to knowledge. Surely the name of one's own child can remain knowledge through brute memory.

Our alternative approach in terms of faculties and intellectual virtues can, of course, make room for memory. Memory, like inference, is a faculty whose inputs are beliefs. Such faculties are virtuous in proportion to their capacity to emit true outputs from true inputs. In the case of inference, the outputs are different from the inputs. Memory, by contrast, retains its inputs and delivers the same later as outputs when appropriate. Such, anyhow, is the way of *good* memory. And someone blessed with good memory can know a name just by recall. According to our alternative approach, then, to know is to believe through a faculty or intellectual virtue.<sup>13</sup>

This approach also has its problems to face. It needs to be developed and defended. That is the main overall objective of the essays in this collection, which defend an account of knowledge with two main ideas: that of intellectual virtue and that of epistemic perspective.

Part I of the collection is on the nature of knowledge. The first chapter contains the following three things, among others:

- (a) A distinction between "subjective," *internal* justification, on one hand, and "objective," *external* justification, on the other both required for knowledge.
- (b) A discussion of evidence one does not possess, and of the social aspect of knowledge, and of how these go beyond the subjective or internal rationality of belief.<sup>14</sup>
- (c) A defeasibility framework of justification, according to which
- 13 My approach is in some respects akin to the reliabilist externalism of Ramsey, Armstrong, Dretske, Goldman, Nozick, Swain, and others. The most recent and extensively developed reliabilism is discussed in Chapter 8 and is compared with the present approach. My account is different in important respects from reliabilism, especially as concerns the need for doxastic ascent and epistemic perspective, as may be seen especially in Parts III and IV.
- 14 A further social aspect of knowledge is recognized through the place allowed to testimony (e.g., in condition oj<sub>5</sub>), whose status as a source of knowledge is defended later, in Chapter 12. Also relevant here is a relativization of knowledge to epistemic community, which comes to the fore in Chapter 2. But note well: The commitment here is to a kind of benign relativism uninfected by any sort of subjectivism or conventionalism.

positive evidence for a belief can be defeated or overridden by additional facts.

A belief can amount to knowledge only if it is (i) internally justified, by being a rational belief that accords with the evidence given, and also (ii) externally justified, by meeting requirements like those imposed by (b) and (c) above. The second chapter widens the externalism thus present already in the first.

(d) It is required not only that the subject's evidence not be false – that there be no falsehood in any internal structure of assumptions, presumptions, premises, reasons, and so forth, that underlies any belief amounting to knowledge – but also that the subject who knows must be "in a position to know."

Whether or not one is thus in a position to know is, moreover, determined by factors beyond internal subjectivity, factors that go beyond rational justification and pertain, for example, to the faculties and context of the subject. And with these external factors comes also a relativization of knowledge to epistemic community.<sup>15</sup>

The recognition of a general distinction between internal and external factors relevant to whether a subject knows is supplemented (in Chapter 14) by a contrast between aptness and justification of belief and applied (in Chapter 15) to questions about the viability of reflexive equilibrium and of analytic epistemology itself, as well as to questions of relativism. However:

(e) The contrast between the aptness and the justification of a belief does not remove the need for two varieties of justification, the subjective and the objective, as in (a).

A subject may have an internally justified belief B that derives from fine faculties of perception, memory, introspection, and abduction, in an environment E generally favorable to such faculties, while yet in this particular instance the abductive and other rational support is essentially flawed by falsehood. Such a flaw must be precluded through a requirement of *objective* justification, something a belief needs – in addition to aptness and subjective justification – in order to constitute knowledge.

Chapter 2 - "How Do You Know?" - adds a further commitment:

- (f) Normative epistemic properties must supervene or derive from properties that are not normatively epistemic, where normatively
- 15 This distinction between internal and external aspects involved in knowledge then plays an increasing role, especially in Chapters 8, 14, and 15.

epistemic properties are those involved in knowledge, such as those that specify how rational or how apt is someone's belief within certain circumstances.<sup>16</sup>

A modest *epistemic perspectivism* enters with the remaining chapters in Part I,<sup>17</sup> which present the following thesis:

(g) One needs an epistemic perspective for full reflexive knowledge – knowledge that surpasses mere "thermometer" or "servo-mechanic" or even "animal" proto-knowledge.

This thesis is developed later, <sup>18</sup> where the epistemic perspective is crucial to proposed solutions for the generality problem and the new evil-demon problem. It is this large role played by the epistemic perspective that prompts the label "virtue perspectivism" for the view under development.

Two main alternatives in epistemology today are reliabilism and coherentism:

(h) Reliabilism and coherentism each contain important insights, but any deep enough defense of either must make room for important elements of the other.

These competing alternatives are often discussed in what follows, <sup>19</sup> where virtue perspectivism emerges gradually as an irenic alternative, one variously defended in Parts II and III, and developed more positively and explicitly in Part IV. <sup>20</sup>

- 16 See the account of what it is for a set to *fully validate* an epistemic proposition, account I in the appendix to that chapter. This commitment remains throughout, but see especially Chapters 9 and 10. The appendix to Chapter 9 shows how a framework of prima facie justification is compatible with the supervenience of justification.
- 17 Chapters 3 and 4.
- 18 Chapters 8, 11, 12, and 16.
- 19 For reliabilism, see Chapter 7 and especially Chapter 8, which explains how virtue perspectivism differs from reliabilism. For coherentism, see especially Chapters 7, 11, and 12.
- 20 Much remains to be done, however; for example, virtue epistemology needs to be compared with virtue ethics, as each will likely support the other. Cf. John Greco, "Virtue Epistemology," in *The Blackwell Companion to Epistemology*, J. Dancy and E. Sosa, eds. (Oxford: Basil Blackwell, in press).